



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

RBE105-45045W1-PO
Job Sheet 185059



Part No: RBE105-45045W1-PO

Job Qty: 1 ea

Part Name: Trammel



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 10/22/18

Job Tracking No:

Due Date: 11/16/18

Created By: Patrick Lussier

Type: Stock

Description:

Note: DWG RBE105-45045W1 Rev.1 IPP Rev. A 18.10.22 New issue DP Verify DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	Purchasing	1 pcs		11/16/18	0.00	0.00	Purchasing		DEC 12 2018
110	Packaging	1 pcs		11/16/18	0.00	0.00	Packaging2		DEC 12 2018
120	QC	1 pcs		11/16/18	0.00	0.00	QC6		38
130	Packaging	1 pcs		11/16/18	0.00	0.00	Packaging3		DAG 9-08
140	QC21-FG	1 Ea		11/16/18	0.00	0.00	QC21		21 DEC 12 2018

Part Op 100 - Issue P/O: _____ MANUFACTURE RBE105-45045W1 AS PER DWG Supplier: METEC Certificate of Descriptions: conformity is required

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
RBE105-45045W1P	Trammel	1 (1 ea)	100-Purchasing	5137049

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-Purchasing	RBE105-45045W1P	1	0	0

Part Specifications

Specifications could not be found.



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Plex 10/22/18 12:50 PM dart.Lussier.Patrick

Container No: S137053



Part: RBE105-45045W1

Job No: 185059

Serial No/Batch: S137053

Revision: 1

Inspector:

Exp Date:

Instructions:

Date: 12/12/18

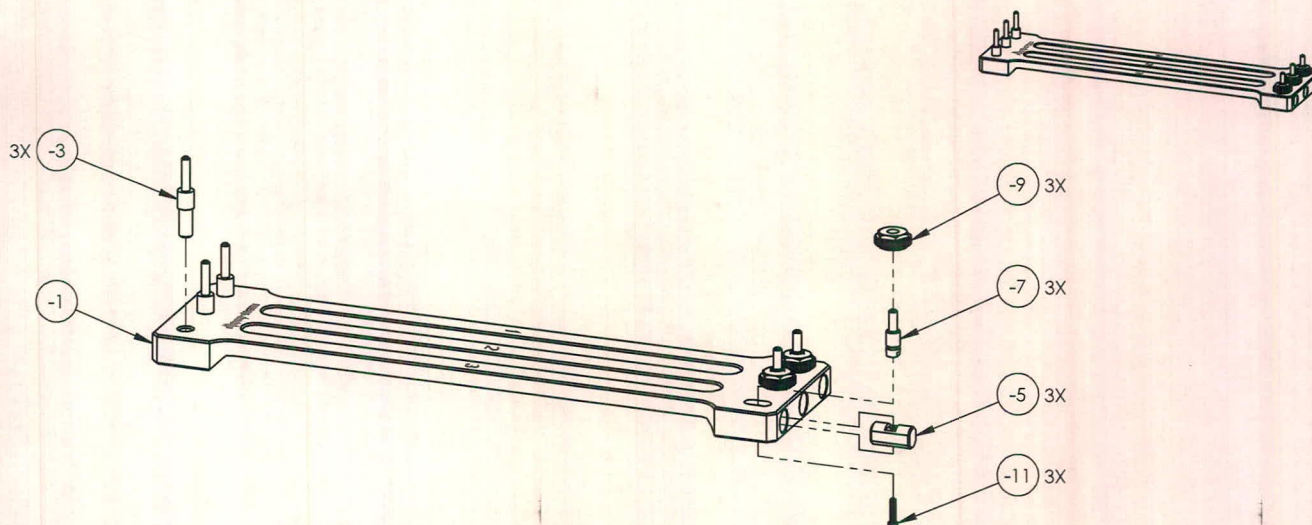
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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		RELEASED FOR PRODUCTION.	9/6/2016	DPD	JAG



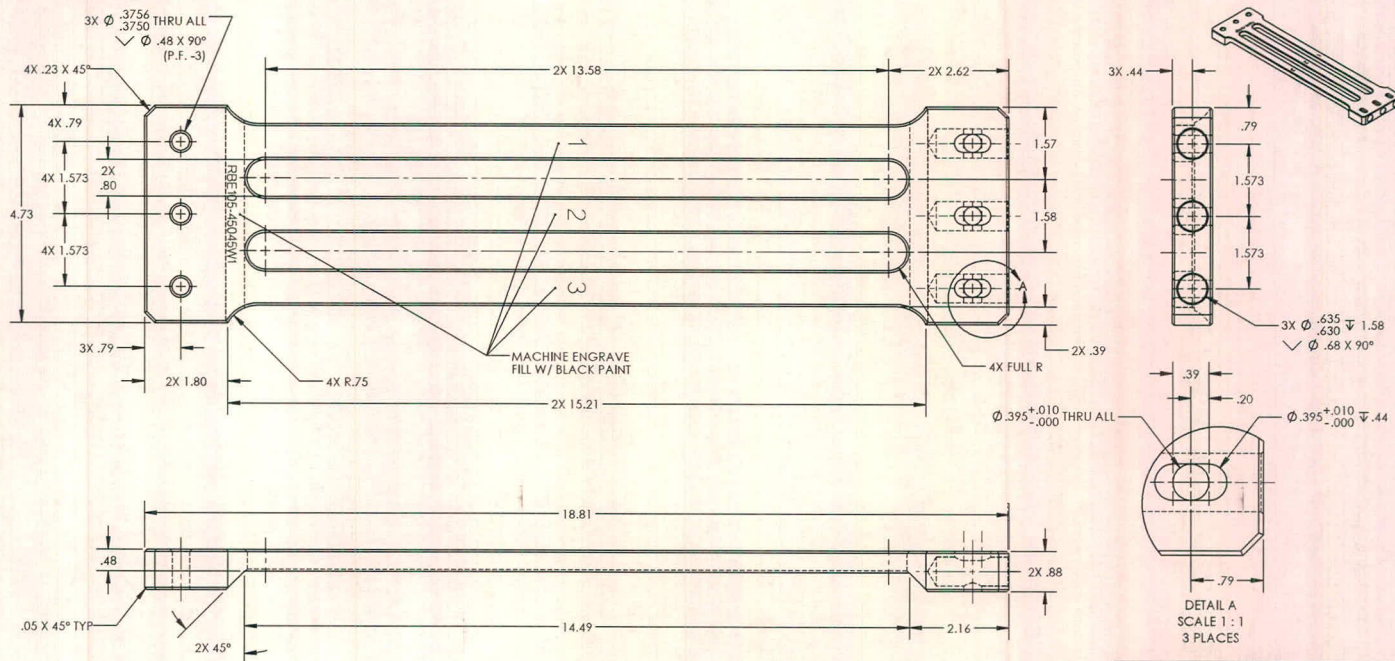
NOTE:
REF. AIRBUS T/N: 105-45045W1.

DART AEROSPACE																							
TITLE TRAMMEL																							
DWG NO. RBE105-45045W1	REV 1																						
<table border="1"> <tr> <td>MAT'L</td> <td>UNLESS OTHERWISE SPECIFIED</td> </tr> <tr> <td>HEAT TREAT</td> <td>DIMENSIONS ARE IN INCHES</td> </tr> <tr> <td>FINISH</td> <td>FRACTIONS ± 1/8</td> </tr> <tr> <td>SPEC</td> <td>.XX ± .01 ANGLES ± .5°</td> </tr> <tr> <td></td> <td>.X ± .1 SURFACES = 125</td> </tr> <tr> <td>DRAWN BY: DUERFELDT</td> <td>1. BREAK ALL SHARP EDGES .015 x 45° OR .015R</td> </tr> <tr> <td>CHECKED: CLOUGH</td> <td>2. DIMENSIONAL LIMITS APPLY AFTER PLATING</td> </tr> <tr> <td>OPPS APPR: ANDERSON</td> <td>3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009</td> </tr> <tr> <td>QA APPR: LINDSAY</td> <td>USED ON MODEL</td> </tr> <tr> <td>APPROVED: GILBERT</td> <td>H145</td> </tr> <tr> <td>SCALE 1:4</td> <td>DATE 8/23/2016</td> </tr> </table>		MAT'L	UNLESS OTHERWISE SPECIFIED	HEAT TREAT	DIMENSIONS ARE IN INCHES	FINISH	FRACTIONS ± 1/8	SPEC	.XX ± .01 ANGLES ± .5°		.X ± .1 SURFACES = 125	DRAWN BY: DUERFELDT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	CHECKED: CLOUGH	2. DIMENSIONAL LIMITS APPLY AFTER PLATING	OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009	QA APPR: LINDSAY	USED ON MODEL	APPROVED: GILBERT	H145	SCALE 1:4	DATE 8/23/2016
MAT'L	UNLESS OTHERWISE SPECIFIED																						
HEAT TREAT	DIMENSIONS ARE IN INCHES																						
FINISH	FRACTIONS ± 1/8																						
SPEC	.XX ± .01 ANGLES ± .5°																						
	.X ± .1 SURFACES = 125																						
DRAWN BY: DUERFELDT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R																						
CHECKED: CLOUGH	2. DIMENSIONAL LIMITS APPLY AFTER PLATING																						
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009																						
QA APPR: LINDSAY	USED ON MODEL																						
APPROVED: GILBERT	H145																						
SCALE 1:4	DATE 8/23/2016																						
SHEET 1 OF 6																							

ASSY QTY	ASSY QTY	B/O	Part #	UNIT QTY	Description	Material	B/O INFORMATION OR SPECIFICATIONS	PG.
			-1	1	BASE PLATE	6061		2
			-3	3	STATIONARY PIN	303 S.S.		3
			-5	3	POSITIONING ANCHOR	303 S.S.		4
			-7	3	POSITIONING PIN	303 S.S.		5
			-9	3	POSITIONING NUT	BRASS		6
		B/O	-11	3	FILLISTER SLOTTED MACHINE SCREW	S.S.	M4 X 0.7mm X 18mm (MCMASTER-CARR #91800A227)	1

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REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
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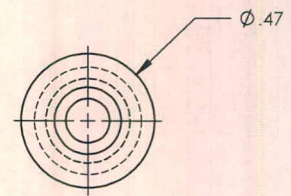
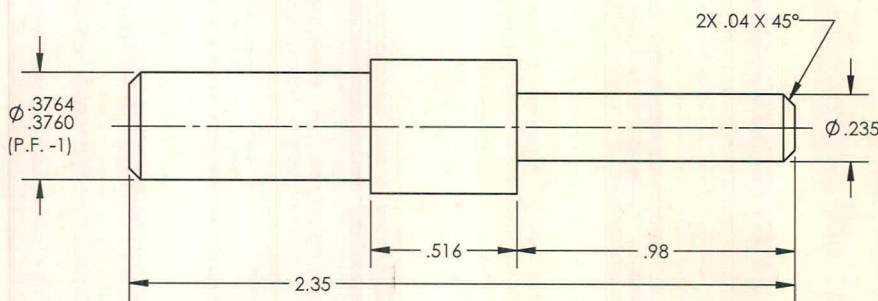
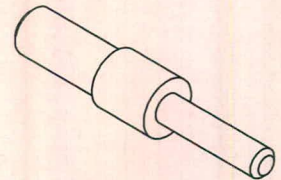


①
BASE PLATE

TITLE		REV
TRAMMEL		1
RBE105-45045W1-1		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		
XXX & .005 FRACTIONS & 1/16		
XX & .01 ANGLES & 15°		
X & .01 SURFACES & 125°		
1. BREAK ALL SHARP EDGES		
2. DIMENSIONAL LIMITS APPLY		
3. INTERPRET DIM AND TOL PER		
ASME Y14.5M-2009		
USED ON MODEL		
SCALE	DATE	11/45
1-2	8/23/2016	SHEET 2 OF 6

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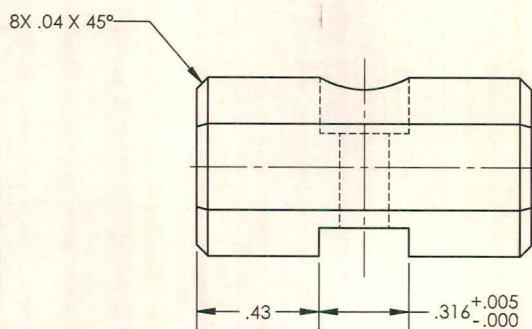
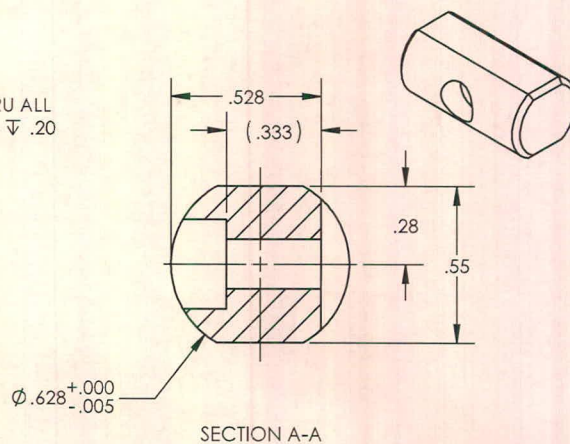
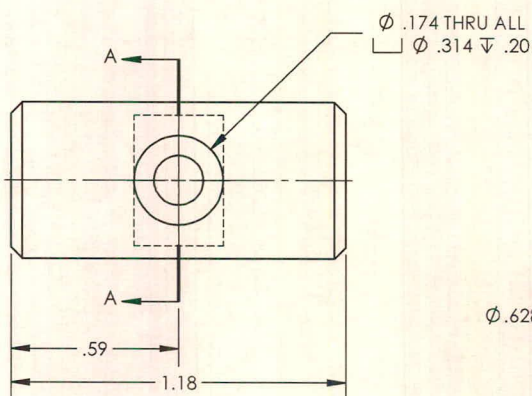
(-3)

STATIONARY PIN

DART AEROSPACE	
TITLE TRAMMEL	
DWG NO. RBE105-45045W1-3	REV 1
MAT'L 303 S.S.	UNLESS OTHERWISE SPECIFIED
HEAT	DIMENSIONS ARE IN INCHES
TREAT	.XXX ± .005 FRACTIONS ± 1/8
FINISH	.XX ± .01 ANGLES ± 5°
SPEC	.X ± .1 SURFACES = 125
DRAWN BY: DUERFELDT	1. BREAK ALL SHARP EDGES
CHECKED: CLOUGH	2. DIMENSIONAL LIMITS APPLY
OPPS APPR: ANDERSON	AFTER PLATING
QA APPR: LINDSAY	3. INTERPRET DIM AND TOL PER
APPROVED: GILBERT	ASME Y14.6M-2009
	USED ON MODEL
	H145
SCALE 2:1	DATE 8/23/2016
	SHEET 3 OF 6

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REVISIONS			
REV	ECR	DESCRIPTION	DATE



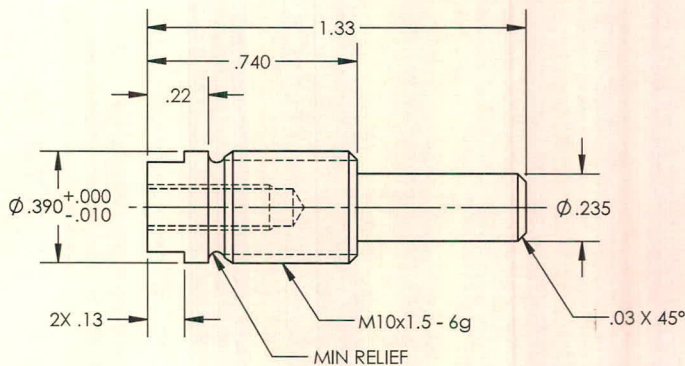
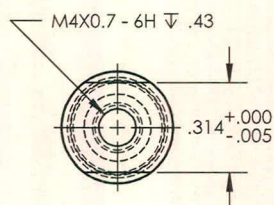
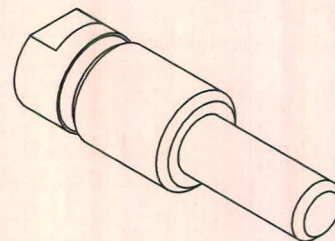
(-5)

POSITIONING ANCHOR

DART AEROSPACE	
TITLE TRAMMEL	
DWG NO. RBE105-45045W1-5	REV 1
MAT'L 303 S.S.	UNLESS OTHERWISE SPECIFIED
HEAT TREAT	DIMENSIONS ARE IN INCHES
FINISH	.XXX $\pm .005$ FRACTIONS $\pm 1/8$
SPEC	.XX $\pm .01$ ANGLES $\pm 5^\circ$
	.X $\pm .1$ SURFACES = 125
DRAWN BY: DUERFELDT	1. BREAK ALL SHARP EDGES
CHECKED: CLOUGH	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	H145
SCALE 2:1	DATE 8/23/2016
SHEET 4 OF 6	

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REVISIONS				
REV	ECR	DESCRIPTION	DATE	INITIAL
				APPROVED



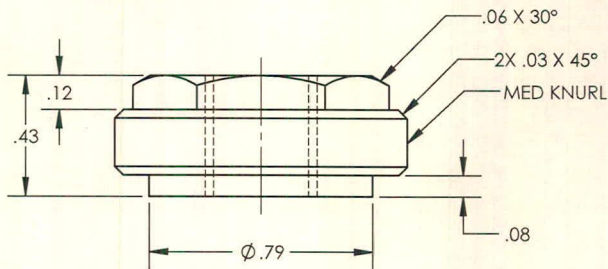
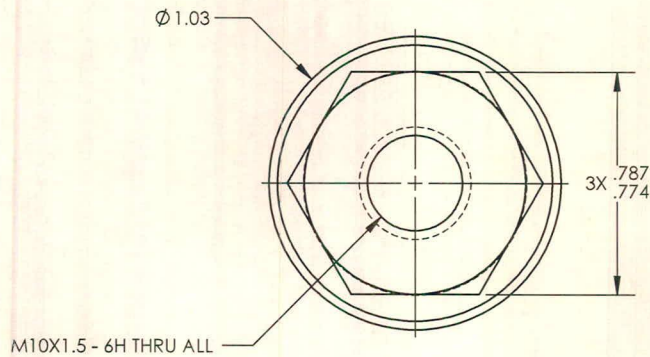
(-7)

POSITIONING PIN

DART AEROSPACE	
TITLE TRAMMEL	
DWG NO. RBE105-45045W1-7	REV 1
MAT'L 303 S.S.	UNLESS OTHERWISE SPECIFIED
HEAT	DIMENSIONS ARE IN INCHES
TREAT	.XXX ± .005 FRACTIONS ± 1/8
FINISH	.XX ± .01 ANGLES ± 5°
SPEC	.X ± .1 SURFACES = 125
DRAWN BY: DUERFELDT	1. BREAK ALL SHARP EDGES
CHECKED: CLOUGH	.016 X 45° OR .016R
OPPS APPR: ANDERSON	2. DIMENSIONAL LIMITS APPLY
QA APPR: LINDSAY	AFTER PLATING
APPROVED: GILBERT	3. INTERPRET DIM AND TOL PER
	ASME Y14.5M-2009
	USED ON MODEL
	H145
SCALE 2:1	DATE 8/23/2016
	SHEET 5 OF 6

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REVISIONS			
REV	ECR	DESCRIPTION	DATE INITIAL APPROVED



(-9)

POSITIONING NUT

DART AEROSPACE																									
TITLE TRAMMEL																									
DWG NO. RBE105-45045W1-9	REV 1																								
<table border="1"> <tr> <td>MAT'L BRASS</td> <td>UNLESS OTHERWISE SPECIFIED</td> </tr> <tr> <td>HEAT TREAT</td> <td>DIMENSIONS ARE IN INCHES</td> </tr> <tr> <td>FINISH</td> <td>.XXX ± .005 FRACTIONS ± 1/8</td> </tr> <tr> <td>SPEC</td> <td>.XX ± .01 ANGLES ± .5°</td> </tr> <tr> <td></td> <td>.X ± .1 SURFACES = 125</td> </tr> <tr> <td>DRAWN BY: DUERFELDT</td> <td>1. BREAK ALL SHARP EDGES</td> </tr> <tr> <td>CHECKED: CLOUGH</td> <td>2. DIMENSIONAL LIMITS APPLY</td> </tr> <tr> <td>OPPS APPR: ANDERSON</td> <td>AFTER PLATING</td> </tr> <tr> <td>QA APPR: LINDSAY</td> <td>3. INTERPRET DIM AND TOL PER</td> </tr> <tr> <td>APPROVED: GILBERT</td> <td>ASME Y14.5M-2009</td> </tr> <tr> <td></td> <td>USED ON MODEL</td> </tr> <tr> <td></td> <td>H145</td> </tr> </table>		MAT'L BRASS	UNLESS OTHERWISE SPECIFIED	HEAT TREAT	DIMENSIONS ARE IN INCHES	FINISH	.XXX ± .005 FRACTIONS ± 1/8	SPEC	.XX ± .01 ANGLES ± .5°		.X ± .1 SURFACES = 125	DRAWN BY: DUERFELDT	1. BREAK ALL SHARP EDGES	CHECKED: CLOUGH	2. DIMENSIONAL LIMITS APPLY	OPPS APPR: ANDERSON	AFTER PLATING	QA APPR: LINDSAY	3. INTERPRET DIM AND TOL PER	APPROVED: GILBERT	ASME Y14.5M-2009		USED ON MODEL		H145
MAT'L BRASS	UNLESS OTHERWISE SPECIFIED																								
HEAT TREAT	DIMENSIONS ARE IN INCHES																								
FINISH	.XXX ± .005 FRACTIONS ± 1/8																								
SPEC	.XX ± .01 ANGLES ± .5°																								
	.X ± .1 SURFACES = 125																								
DRAWN BY: DUERFELDT	1. BREAK ALL SHARP EDGES																								
CHECKED: CLOUGH	2. DIMENSIONAL LIMITS APPLY																								
OPPS APPR: ANDERSON	AFTER PLATING																								
QA APPR: LINDSAY	3. INTERPRET DIM AND TOL PER																								
APPROVED: GILBERT	ASME Y14.5M-2009																								
	USED ON MODEL																								
	H145																								
SCALE 2:1	DATE 8/23/2016																								
SHEET 6 OF 6																									



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO041411**

Supplier: MEM001-VC
Metec Metal Technology Inc.
20 Terry Fox Drive PO Box 781
Vankleek Hill
ON
K0B 1R0 Canada
Phone: 613 678 3957
Fax: 613 678 3956

Attention: Walz, Shigi

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: PO041411
PO Date: 10/22/18
Due Date: 12/14/18
Purchase Order Revision:
Revision Date:
Ship-To Contact: Lussier, PatrickPhone:

Via: Ground
Pymt Terms: Net 60

Freight Terms:
Special Comments:

Revised

Items

Line Item	Job	Part	Supplier Part No	Item No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	185055	RBE105-14101W2P			Outer Needle Bearings Extractor	Firmed	-	12/14/18	1 Ea	0 Ea	1 Ea	\$4,100.00/Ea	\$4,100.00
Line Item Note REV 1													
2	185058	RBE105-14101W18P			Pressing-In Tool	Firmed	-	12/14/18	1 Ea	0 Ea	1 Ea	\$1,950.00/Ea	\$1,950.00
Line Item Note REV 1													
3	185059	RBE105-45045W1P			Trammel	Firmed	-	12/14/18	1 Ea	0 Ea	1 Ea	\$4,900.00/Ea	\$4,900.00
Line Item Note REV 1													
4	185061	RBE105W27P			Main Gear Box Hoisting Device	Firmed	-	12/14/18	1 Ea	0 Ea	1 Ea	\$0.01/Ea	\$0.01
Line Item Note REV 1													
5	185063	RBE105-31501W6P			Puller	Firmed	-	12/14/18	1 Ea	0 Ea	1 Ea	\$820.00/Ea	\$820.00
Line Item Note REV 1													
6	185064	RBE105-31702W24P			Tail Rotor Fork Shaft Check	Firmed	-	12/14/18	1 Ea	0 Ea	1 Ea	\$0.01/Ea	\$0.01
Line Item Note REV 1													
7	185065	RBE105-13101W3P			Disassembly / Assembly - Rotating Control Rod	Firmed	-	12/14/18	1 Ea	0 Ea	1 Ea	\$5,050.00/Ea	\$5,050.00



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER
PO041411

Items

Line Item	Job	Part	Supplier Part No	Item No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
8	185106	RBE105-14101W12-1P			Mounting Shaft Assembly	Firmed	-	12/14/18 DEC 12 2018	1 Ea	0 Ea	1 Ea	\$520.00/Ea	\$520.00
Line Item Note Sub assy on part # RBE105-14101W12 REV 1													
9	185107	RBE105-14101W12-9P			Mounting Base	Firmed	-	12/14/18 DEC 12 2018	1 Ea	0 Ea	1 Ea	\$520.00/Ea	\$520.00
Line Item Note Sub assy on part # RBE105-14101W12 REV 1													
Grand Total:												\$17,860.02	

Order Notes

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Procurement Quality Clauses
 A005 RIGHT OF ENTRY
 A007 FIRST ARTICLE INSPECTION (FAI) BY SELLER, (DOCUMENTATION MAINTAINED BY SUPPLIER)
 A012 CHEMICAL AND PHYSICAL TEST REPORTS
 A016 PERSONNEL QUALIFICATION
 A017 RAW MATERIAL IDENTIFICATION (AS APPLICABLE)
 A026 CERTIFICATION OF MATERIAL CONFORMANCE
 A041 QUALITY MANAGEMENT SYSTEM
 A042 DART NOTIFICATION BY SUPPLIER
 A043 RETENTION OF QUALITY DOCUMENT
 A048 COUNTERFEIT PARTS AVOIDANCE, DETECTION, MITIGATION AND DISPOSITION PROGRAM
 A049 SUPPLIER AWARENESS

Plex 12/11/18 9:11 AM dart.Lussier.Patrick

Packing List

Bill Dart Aerospace Ltd.
To: 1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Canada

Ship Dart Aerospace Ltd.
To: 1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Canada

Shipment No: 24364
Shipment Date: 10-Dec-2018
Ship Via: our truck
Order Number: 3112
Order Date: 10/24/18

Customer Code: DART
Phone: (613) 632-9577
PO Number: PO041411 ✓
Terms: Net 60 Days

Quantity					Unit	Description	Revision	Job Number
Item	Open	Shipped	B/O	Canceled				
1	1	1 ✓	0	0	EA	DART-RBE105-14101W2P Extractor for Outer Needle Bearing	1	3112-01
2	1	1 ✓	0	0	EA	DART-RBE105-14101W18P Pressing - In Tool	1	3112-02
3	1	1 ✓	0	0	EA	DART-RBE105-45045W1P Trammel	1	3112-03
5	1	1 ✓	0	0	EA	DART-RBE105-31501W6P Puller	1	3112-05
7	1	1 ✓	0	0	EA	DART-RBE105-13101W3P Pitch Link Tool	1	3112-07
8	1	1 ✓	0	0	EA	DART-RBE105-14101W12-1P MOUNTING SHAFT ASSEMBLY	1	3112-08
9	1	1 ✓	0	0	EA	DART-RBE105-14101W12-9P MOUNTING BASE	1	3112-09

DAS
38
9-89

The delivered goods must be inspected upon receipt to confirm compliance. Should there be discrepancies please notify METEC within 30 days of delivery. The goods are otherwise deemed accepted.

Received In Good Order By

Page 1 of 1



20 Terry Fox Drive, Vankleek Hill, Ontario K0B 1R0

Tel. (613) 678-3957 & (613) 678-2782 Fax (613) 678-3956 metec@metec.ca

CERTIFICATE OF CONFORMITY

SOLD TO:

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, Ont.
K6A 1K7

SHIPPED TO:

same

Quantity	Part Number	Part Name	Dwg Rev#	P.O. Number
1 /	RBE105-14101W2P ✓	Outer Needle Bearings Extractor	1	PO041411 /
1 /	RBE105-14101W18P ✓	Pressing-In Tool	1	PO041411 /
1 /	RBE105-45045W1P ✓	Trammel	1	PO041411 /
1 /	RBE105-31501W6P ✓	Puller	1	PO041411 /
1 /	RBE105-13101W3P ✓	Pitch Link Tool	-	PO041411 /
1 /	RBE105-14101W12-1P ✓	Mounting Shaft	1	PO041411 /
1 /	RBE105-14101W12-9P ✓	Mounting Base	1	PO041411 /

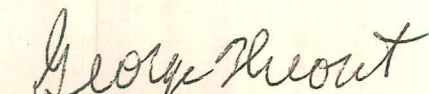
DAS
38
9-89

No deviations for these part

Material supplied by METEC

We hereby certify that the above parts were made in conformance with applicable drawings.

METEC Metal Technology Inc.


George Théoret

Vankleek Hill, December 10, 2018

